



GOVERNMENT & SUSTAINABLE CONSTRUCTION:
USE OF VOLUNTARY CONSENSUS STANDARDS

UNECE WP 6
NOVEMBER 18-20, 2013

Mary C. McKiel, Ph.D.
Standards Executive, U.S. EPA
Chairman, ASTM International Board of Directors

Overview

- Legislative and Policy Framework
- Standards as Fundamental Tool
- Benefits to Government
- Sustainability Elements in Construction
- Government Use of Standards for Sustainable Construction
- Summary

Legislative and Policy Framework

- **Incumbent on Government Agencies:**

- Laws
- Treaties
- Executive Orders from the President
- Regulations

- **Government Activities:**

- Regulations & Compliance
- Guidance
- Education
- Voluntary and Incentive Programs



AREAS WHERE GOVERNMENT
USES VOLUNTARY STANDARDS

Government Reliance on Voluntary Consensus Standards

- **National Technology Transfer and Advancement Act of 1995 (NTTAA)**
 - Federal agencies directed to use standards developed by voluntary consensus standards organization when possible
 - Federal agencies directed to participate in standards development organizations when possible
- **Office of Management & Budget (OMB) Circular No. A-119**
 - Implements the NTTAA in Government activities
 - Discourages government-unique standards
 - Requires annual reporting to Congress

Benefits to Government

- Eliminate/reduce costs
- Expert technical underpinning to projects
- Increase confidence, reliability, consistency in construction, mobility from project to projects
- Facilitate safety, health and environmental elements
- Promote efficiency
- Economic competition
- Maximize pool of available experts from all sectors
- **Mobility from one authority to another**

Sustainable Construction In Government Operations and Programs

- **Procurement of Green and Sustainable Goods and Services**
 - Federal-wide programs for Greening Government acquisitions and services
 - EPA guides for environmentally preferable products based on voluntary standards
 - Green meetings – new ASTM standard
- **Federal Buildings**
 - Environmentally preferable standards for federal building management and construction
 - Voluntary standards for building performance indicators both inside and out that go beyond regulatory requirements
 - Service contracts for low VOC cleaners and degreasers used in buildings
 - Contracts for building construction and maintenance that meet relevant standards (ASTM, LEED, etc.)
- **Incentive Programs and Partnerships**
 - Energy Star
 - Waster Sense
 - Work with Academic institutions: engineering and architectural schools

RELEVANT AUTHORITIES: EXAMPLES

Elements

Relevant Gov Entities

Design & Planning	→	Federal, municipal or local
Location	→	State, Municipal, Local, EPA
Materials & Safety	→	Consumer Product Safety Commission; Other
Energy Usage	→	EPA; Dept. of Energy
Water Use	→	State; Municipal; Local EPA
Indoor Quality	→	EPA; State and Local
Lighting	→	Dept. of Energy; EPA
Waste Management	→	EPA; Municipal; Local

Element: Design & Planning

- ASTM WK 26599 Guide for Design of Sustainable, Low-Slope Roofing Systems.
- ISO 16813:2006 Building environment design -- Indoor environment -- General Principles
- American Society of Heating, Refrigeration and Air-conditioning Engineers (ASHRAE) Guideline 4-1993: Preparation of Operations & Maintenance Documentation for Building Systems
- LEED Reference Guide for Green Building Design and Construction

Element: Location

- ASTM Committee E50 on Environmental Assessment
 - fills the gaps left by agency regulations
 - bridges industry needs while regulation is being developed.
- ASTM E1527, Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process
- ASTM E2247, Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process for Forestland or Rural Property

Element: Solar, Geothermal and Other Alternative Energy Sources

- ASTM and International Association of Plumbing & Mechanical Officials (IAPMO) partnership with the heat metering standard framework – recognized by EPA; adopted by state and local authorities
- ISO 23045:2008 Building environment design -- Guidelines to assess energy efficiency of new buildings
- UL 1703 Standard for Flat-Plate Photovoltaic Modules and Panels (energy efficient; intended for building construction)

Element: Materials & Safety

- UL 2840 Standard for Sustainability for Steel for Use in Construction Products
- Safety-related Standards From:
 - International Association of Plumbing & Mechanical Officials (IAPMO)
 - Underwriters Laboratories (UL)
 - ASTM International
 - International Organization for Standardization (ISO) and International Electro-technical Commission (IEC)
- Codes:
 - National Fire Protection Association
 - National Electrical Codes, etc.

Summary

- Participation in the development of and use of private sector standards that support sustainability in the construction sector
- Regulations and voluntary partnership programs
- Contracts and services using voluntary standards that help drive competition and markets for sustainable construction
- Grants programs to help educate engineers and architecture students on standards as essential tools